

WHAT IS CLAIMED IS:

1. A protective diffusion film for use in a surface light source device provided with a lens film, wherein said protective diffusion film is provided on a light outgoing surface of the lens film, said protective diffusion film comprising:

a transparent substrate layer; and

a protective diffusion layer which is provided on the transparent substrate layer in its surface at least on the lens film side, has fine concaves and convexes on its surface, protects members which come into contact with the protective diffusion film, and is light diffusive.

2. The protective diffusion film according to claim 1, which has a haze of 15 to 50.

3. The protective diffusion film according to claim 1 or 2, wherein the surface of the protective diffusion layer has a ten-point mean roughness R_z of 0.5 to 6 μm .

4. The protective diffusion film according to any one of claims 1 to 3, wherein the number of profile peaks in the concaves and convexes in the protective diffusion layer is 2 to 15 as measured under conditions of a reference length of 0.8 mm and a count level of $\pm 0.1 \mu\text{m}$.

5. The protective diffusion film according to claim 4, wherein the number of profile peaks is counted by a Pcl method.

6. The protective diffusion film according to any one of claims 1 to 5, wherein the protective diffusion layer contains a cured product of an ionizing radiation-curable resin.

7. A protective diffusion film for use in a surface light source device provided with a lens film, wherein said protective diffusion film is provided on a light outgoing surface of the lens film, said protective diffusion film comprising:

a transparent substrate layer;

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a first protective diffusion layer which is provided on the transparent substrate layer in its surface on the lens film side, has fine concaves and convexes on its surface, protects members which come into contact with the protective diffusion film, and is light diffusive; and

a second protective diffusion layer which is provided on the transparent substrate layer in its side remote from the first protective diffusion layer, has fine concaves and convexes on its surface, protects members which come into contact with the protective diffusion film, and is light diffusive.

8. The protective diffusion film according to claim 7, which has a haze of 15 to 50.

9. The protective diffusion film according to claim 7 or 8, wherein the surface of the first protective diffusion layer and/or the surface of the second protective diffusion layer have a ten-point mean roughness R_z of 0.5 to 6 μm .

10. The protective diffusion film according to any one of claims 7 to 9, wherein the number of profile peaks in the concaves and convexes in the first protective diffusion layer or the second protective diffusion layer is 2 to 15 as measured under conditions of a reference length of 0.8 mm and a count level of $\pm 0.1 \mu\text{m}$.

11. The protective diffusion film according to claim 10, wherein the number of profile peaks in the concaves and convexes in the second protective diffusion layer or the first protective diffusion layer provided on the side opposite to the first protective diffusion layer or the second protective diffusion layer is 10 to 40 as measured under conditions of a reference length of 0.8 mm and a count level of $\pm 0.1 \mu\text{m}$.

12. The protective diffusion film according to claim 10 or 11, wherein the number of profile peaks is counted by a Pcl method.

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13. The protective diffusion film according to any one of claims 7 to 12, wherein the protective diffusion layer contains a cured product of an ionizing radiation-curable resin.

14. A process for producing the protective diffusion film according to claim 6 or 13, comprising the steps of:

shaping the ionizing radiation-curable resin into a desired shape by means of a cylinder plate having a mold shape conforming to the shape of said concaves and convexes (step of shaping); and

applying an ionizing radiation to the ionizing radiation-curable resin to form a cured product of the ionizing radiation-curable resin (step of curing).

15. A surface light source device comprising:

a light source;

surface light projection means for surface-projecting light, emitted from the light source, from a light projection surface to a predetermined direction;

a lens film provided on the light projection surface; and

the protective diffusion film, according to any one of claims 1 to 13, provided on the light outgoing surface side of the lens film.

16. A liquid crystal display device comprising:

a light source;

surface light projection means for surface-projecting light, emitted from the light source, from a light projection surface to a predetermined direction;

a lens film provided on the light projection surface;

the protective diffusion film, according to any one of claims 1 to 13, provided on the light outgoing surface side of the lens film; and

a transmission liquid crystal display device disposed on the light outgoing surface side of the protective diffusion film.

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